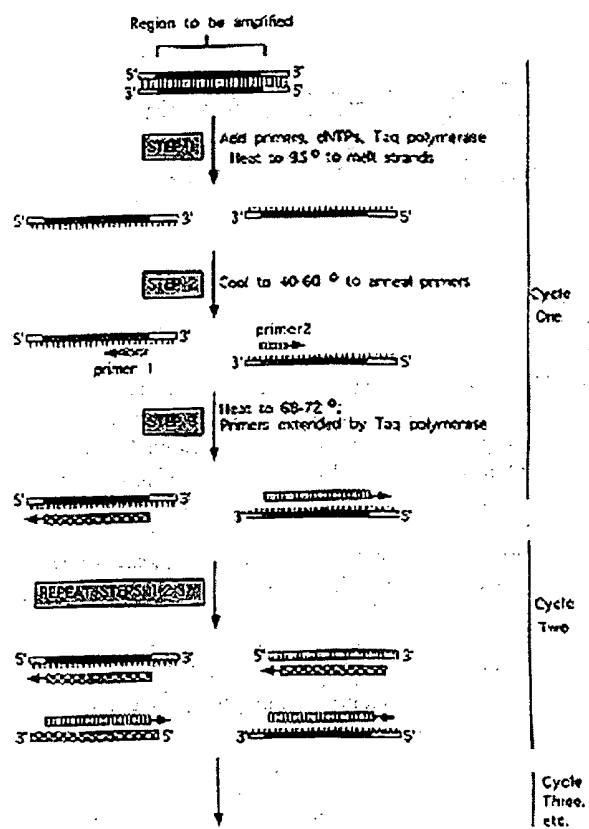


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Fig. 1



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Fig. 2

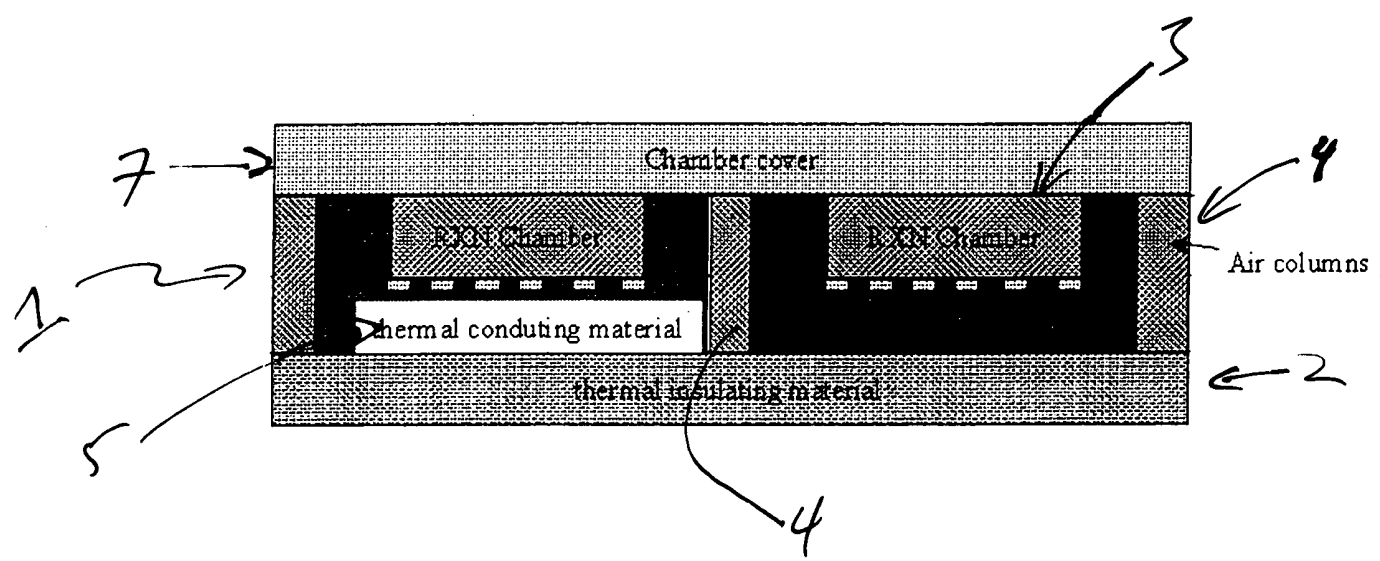
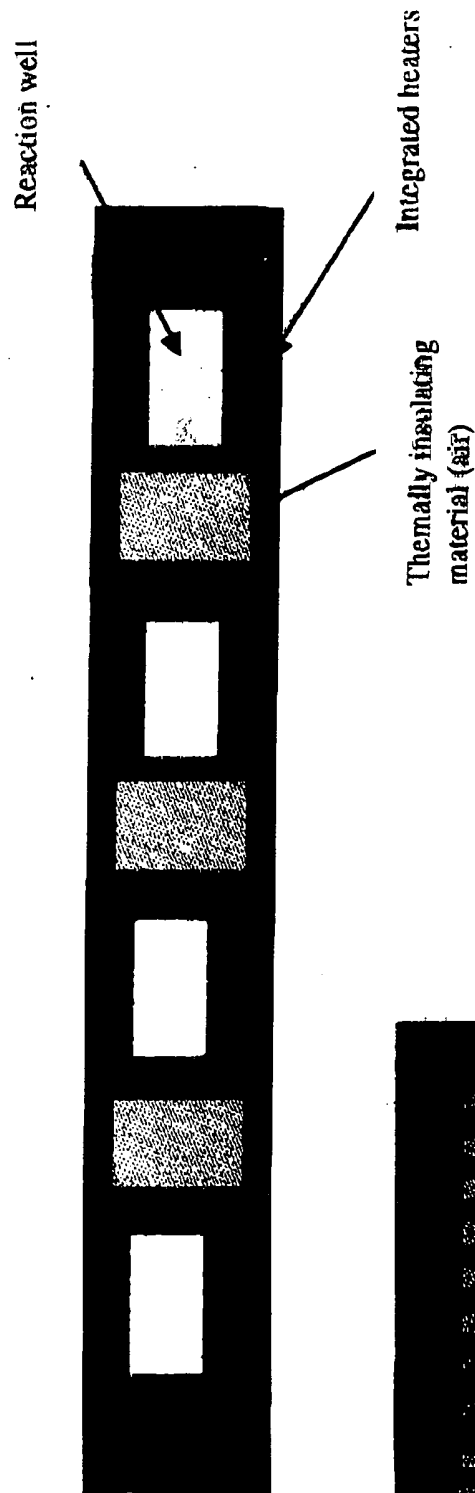
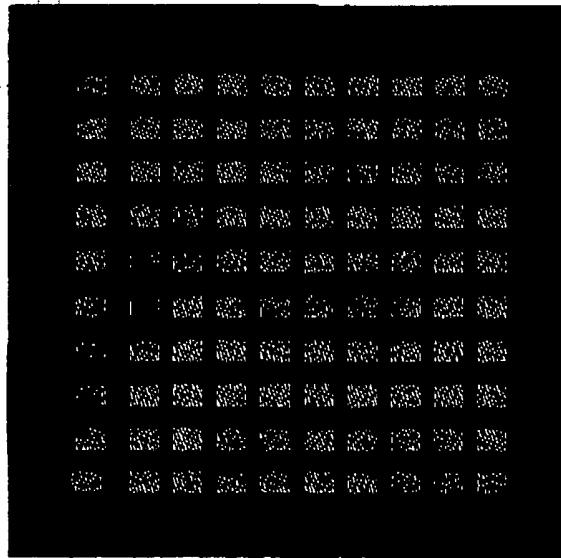


Fig. 3

## Microchip PCR Array



- Integrated & independent heaters
- Multiple sample parallel testing (high throughput)



Example of column - row addressing

# Ceramic micro-PCR Heater Array-Final Design

4 X 4 Array of Reaction Wells  
with Embedded Heaters and  
an Embedded RTD

Fig. 4A

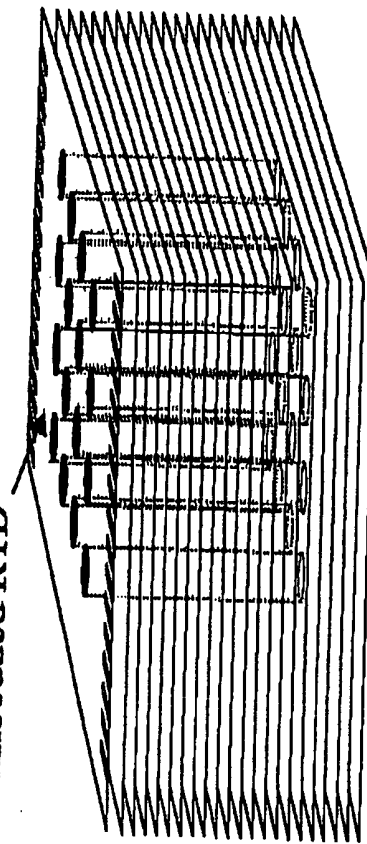
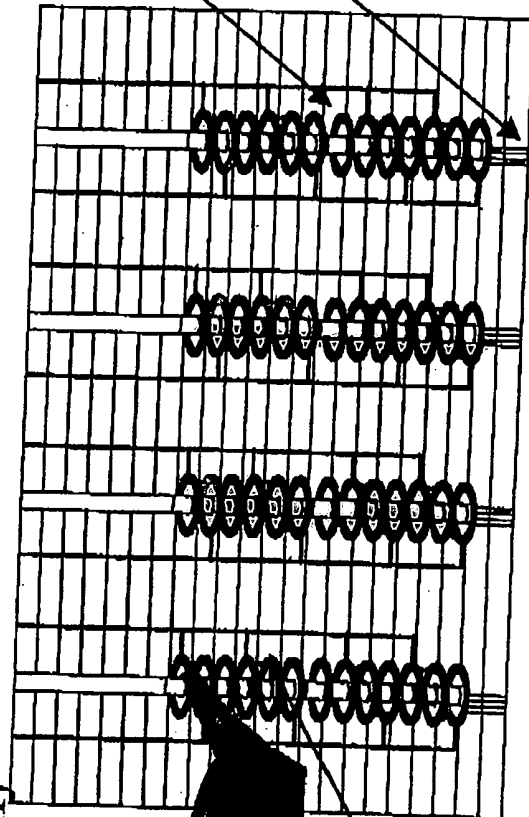
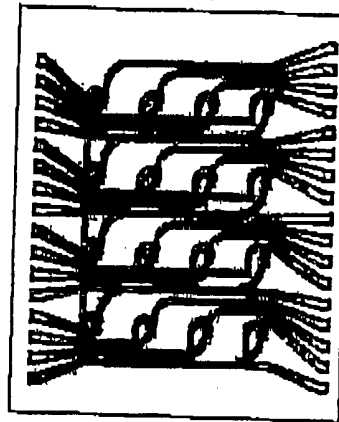


Fig. 4B

Device Anatomy



Embedded Heaters-  
4 Sets of Heaters in Parallel  
3 Heaters in Each Set in Series

Thick-film  
RTD (6)

Thermal-vias

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Fig. 5

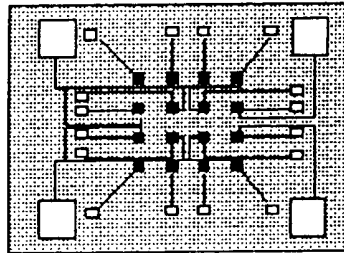
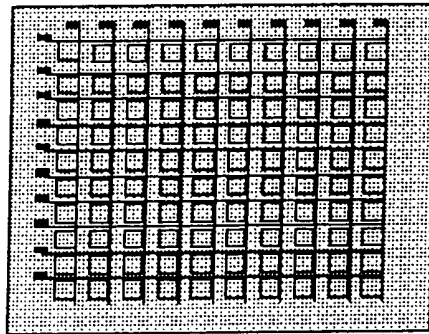
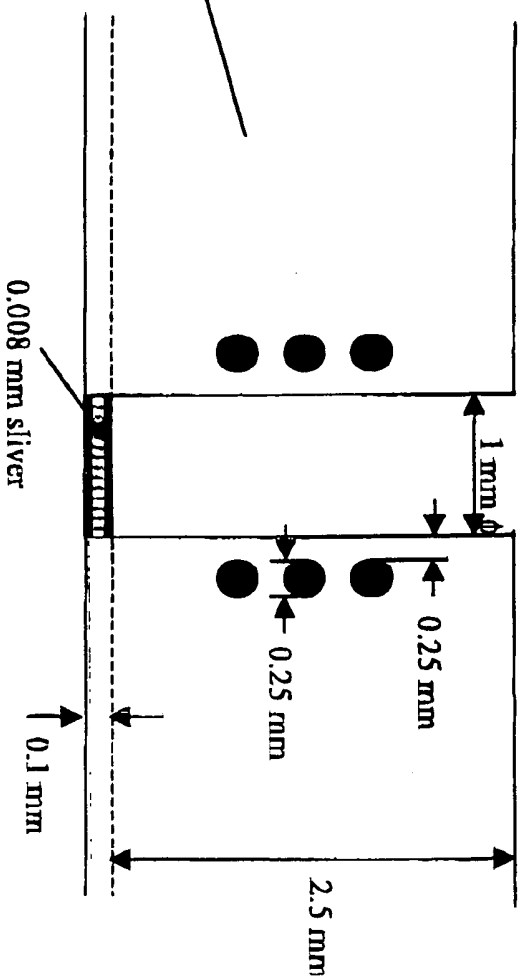
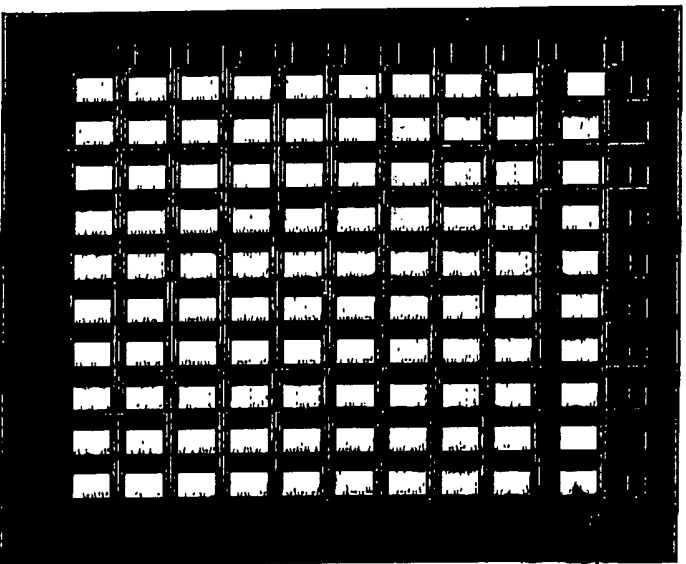


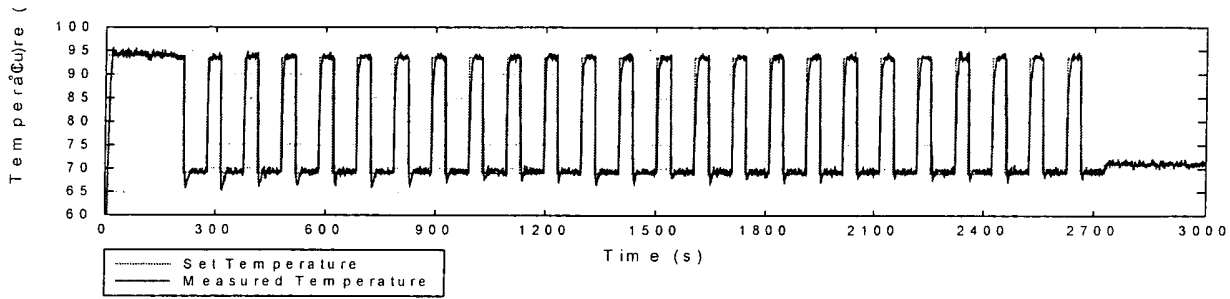
Fig. 6

# Schematic of Array with Integrated Heaters with Active Cooling

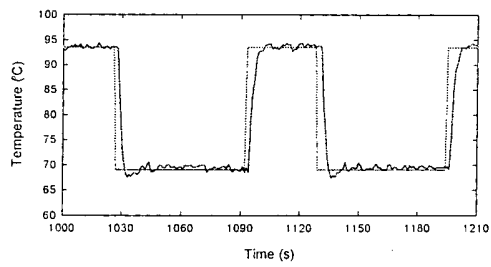


Fig. 7

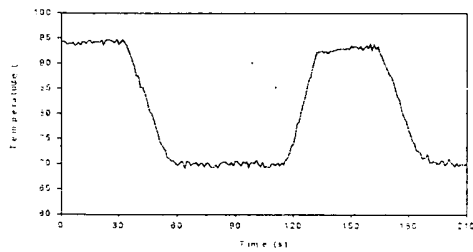




*Fig. 8A*



*Fig. 8B*



*Fig. 8C*

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5542 0945323

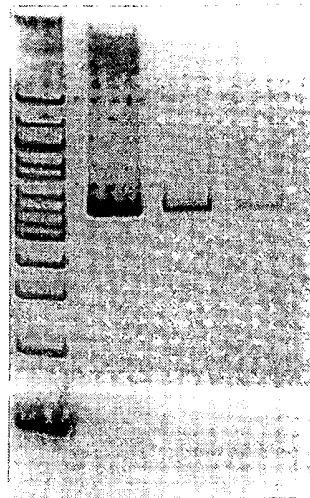


Fig. 9